process an electric signal every one of the divided electrode cells, the electric signals being obtained from the first and second transmission photodetectors via each of the second and third transparent electrodes.

IN THE ABSTRACT

Please amend the Abstract at page 49, lines 2-13 to read as follows:

A photodetector which has the function of measuring the intensity distribution of light with a simple and inexpensive construction and which has a selectivity for a measured wavelength band. The photodetector includes a transparent semiconductor electrode part and counter electrode part on each of which a sensitizing dye is applied, and a buffer layer sandwiched therebetween. The counter electrode part or the transparent semiconductor electrode part is divided into a plurality of electrode cells. Thus, it is possible to realize a compact photodetector which carries out a photoelectric transfer using part of light in a wavelength band absorbed into the sensitizing dye and which has a wavelength selectively.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-11, 13-17 and 19-25 are pending in the present application. Claims 12 and 18 have been canceled and Claims 1, 4-8, 10, 13-16, 19 and 21 have been amended by the present amendment.

In the outstanding Office Action, the Information Disclosure Statement (IDS) filed September 29, 2001 was objected to; the specification was objected to; the title was objected to; the claims were objected to; Claims 12-21 were rejected under 35 U.S.C. § 112, second

paragraph; Claims 8, 12 and 22 were rejected under 35 U.S.C. § 102(e) as anticipated by Theil; Claims 8 and 11 were rejected under 35 U.S.C. § 102(e) as anticipated by Forrest et al; Claim 1 was rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Theil; Claims 2, 3, 5, 6, 9, 10, 13, 14, 23 and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over Theil in view of Hoffman et al; Claims 1, 4 and 7 were rejected under 35 U.S.C. § 103(a) as unpatentable over Forrest et al in view of Robinson; Claim 15 was rejected under 35 U.S.C. § 103(a) as unpatentable over Forrest et al in view of Robinson; and Claim 25 was rejected under 35 U.S.C. § 103(a) as unpatentable over Forrest et al in view of Robinson and Theil.

Regarding the objection to the IDS, we note the IDS was filed before copies of the claims were required (i.e., before the USPTO rules were changed). Accordingly, it is respectfully requested the information submitted in the IDS be considered.

Further, enclosed is a substitute specification including the proper spacings and including the changes made at page 29 in the marked-up copy. No new matter has been added. Accordingly, it is respectfully requested the objection to the specification be withdrawn.

In addition, a new title has been added that is clearly indicative of the invention to which the claims are directed. Accordingly, it is respectfully requested the objection to the title be withdrawn.

Further, the appropriate claims have been amended in light of the objection and rejection under 35 U.S.C. § 112, second paragraph and as shown in the marked-up copies. Accordingly, it is respectfully requested this objection/rejection be withdrawn.

The present invention currently includes independent Claims 1 and 5-8. For example, amended Claim 1 is directed to a transmission photodetector including a first transparent

electrode, and a second transparent electrode in which at least one of the first and second transparent electrodes is divided into a plurality of electrode cells. Also included is a photoelectric transfer part sandwiched between the first and second transparent electrodes and that is common to the plurality of electrode cells. In addition, the first and second transparent electrodes, and the photoelectric transfer part are arranged in an optical path so that light transmitted in the optical path passes through the photodetector and the photodetector is configured to receive the light from both surfaces. Independent Claims 5-8 include similar features.

In a non-limiting example, Figure 1 illustrates a first transparent electrode 1004 and a second transparent electrode that includes two divided first and second electrode cells 1006 and 1007. Also shown is a photoelectric transfer part 1005 sandwiched between the first and second transparent electrodes. In addition, as shown in Figure 3, for example, the first and second transparent electrodes and the photoelectric transfer part are arranged in an optical path so that light transmitted in the optical paths passes through the photodetector (see page 15, line 32 to page 16, line 4). Further, the photodetector is configured to receive the light from both surfaces.

The outstanding Office Action relies on Theil, Forrest et al, Hoffman et al and Robinson as teaching the claimed invention. However, Applicants note that the photodetectors cited in these references are not arranged in an optical path so that the photodetector allows light to be passed therethrough nor is the photodetector configured to receive light from both surfaces. Rather, the photodetectors shown in the applied art are similar to the conventional photodetectors shown in Figure 35, for example, that are not in the optical path of the transmitted light and that do not receive light on both surfaces.

Accordingly, it is respectfully submitted independent Claims 1 and 5-8 and each of

the claims depending therefrom are allowable.

In addition, the abstract has been amended to correspond with standard U.S. patent practice. No new matter has been added.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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IN THE TITLE

(New).

IN THE SPECIFICATION

Please replace the paragraph at page 29, lines 5-17 as follows:

Similarly, the second transmission photo detecting unit 30 comprises a second dye sensitizing transparent semiconductor electrode part 31, a second counter electrode part 32, and a second buffer layer 33 which is sandwiched between both electrode parts. The second counter electrode part 32 is formed on the reverse surface of the first [transparent] counter electrode part 12 via the transparent substrate 50. Similar to the first dye sensitizing transparent semiconductor electrode part, the second dye sensitizing transparent semiconductor electrode part 31 comprises a transparent electrode 35 and transparent semiconductor layer 36 which are formed on a transparent substrate, and a sensitizing dye film 37 which is absorbed onto the semiconductor layer 36.

Please replace the paragraph at page 29, lines 25-33 as follows:

On the other hand, the second counter electrode part provided on the reverse surface of the transparent substrate 50 is divided into cells 38 and 39, each of which has the same shape as that of each of the divided cells of the first [transparent] counter electrode. The cells 18 and 19 are aligned with the cells 38 and 39 via the transparent substrate 50, respectively.

Also in the second transparent electrode, wires 40 and 41 are arranged to as to be able to separately extract current signals which are generated in the respective electrode cells.

IN THE CLAIMS

1. (Amended) A transmission photodetector comprising:

a first transparent electrode[,];

a second transparent electrode, at least one of the first and second transparent electrodes being divided into a plurality of electrode cells[,]; and

a photoelectric transfer part sandwiched between the first and second transparent electrodes, the photoelectric transfer part being common to the plurality of electrode cells,

wherein the first and second transparent electrodes, and the photoelectric transfer part are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

4. (Amended) The transmission photodetector according to claim 1, wherein the photoelectric transfer part comprises an organic p-type semiconductor layer stacked on the first transparent electrode, and an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer, and

wherein the second transparent electrode is [staked] stacked on the organic n-type semiconductor layer.

5. (Amended) A transmission photodetector comprising:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light

in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a carrier transporting layer sandwiched between the sensitizing dye film and the second transparent electrode[;],

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

wherein the first transparent electrode, the transparent semiconductor layer, the sensitizing dye film, the carrier transporting layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

6. (Amended) A transmission photodetector comprising:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode[;],

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

wherein the first transparent electrode, the transparent semiconductor layer, the sensitizing dye film, the dielectric layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector,

and

wherein the photodetector is configured to receive the light from both surfaces.

7. (Amended) A transmission photodetector comprising:

a first transparent electrode;

an organic p-type semiconductor layer stacked on the first transparent electrode;

an organic n-type semiconductor layer stacked on the organic p-type semiconductor .layer; and

a second transparent electrode stacked on the organic n-type semiconductor layer;

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

wherein the first transparent electrode, the organic p-type semiconductor layer, the organic n-type semiconductor layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

8. (Amended) A stacked type photodetector comprising:

a first transmission photodetector configured to carry out a photoelectric transfer with respect to light in a first wavelength band including a predetermined wavelength; and

a second photodetector, stacked on the first transmission photodetector, configured to detect light passing through the first transmission photodetector,

wherein the first and second photodetectors are arranged in an optical path so that light transmitted in the optical path passes through the stacked type photodetector, and

wherein the stacked type photodetector is configured to receive the light from both surfaces.

10. (Amended) The stacked [ttpe] type photodetector according to claim 8, wherein

the first transmission photodetector comprises:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film stacked on the transparent semiconductor layer;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode.

12. (Canceled).

13. (Amended) The stacked type photodetector according to claim 9, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

14. (Amended) The stacked type photodetector according to claim 10, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

15. (Amended) The stacked type photodetector according to claim 11, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

16. (Amended) The stacked type photodetector according to claim 8, further comprising a transparent substrate provided between the first and second photodetectors, the transparent substrate including two principal planes [faced each other] placed on opposite sides,

wherein the first transmission photodetector comprises a first and [a] second transparent electrodes, the second transparent electrode being [stacked] provided on one principal plane of the transparent substrate, the second photodetector has a third transparent electrode [stacked] provided on the other principal plane of the transparent substrate.

18. (Canceled).

19. (Amended) The stacked type photodetector according to claim 17, wherein the plurality of electrode cells [have substantially equal areas] are disposed symmetrically with respect to a [point] center on the optical axis of incident light.

21. (Amended) The stacked type photodetector according to claim [16] 17, further comprising a signal processor, integrally provided with the photodetector, configured to process an electric signal every one of the divided electrode cells, the electric [signal] signals being obtained from the first and second transmission photodetectors via each of the second and third transparent electrodes.

IN THE ABSTRACT

[There is provided a] A photodetector which has the function of measuring the intensity distribution of light with a simple and inexpensive construction and which has a selectivity for a measured wavelength band. The photodetector [comprises] includes a transparent semiconductor electrode part and counter electrode part on each of which a sensitizing dye is applied, and a buffer layer sandwiched therebetween[, the]. The counter electrode part or the transparent semiconductor electrode part [being] is divided into a plurality of electrode cells. Thus, it is possible to realize a compact photodetector which carries out a photoelectric transfer using part of light in a wavelength band absorbed into the sensitizing dye and which has a wavelength selectively.